$$-\frac{3ac}{b^2}\left\{\frac{(b^{\frac{2}{3}}-c^{\frac{2}{3}})^{\frac{5}{2}}(a^{\frac{2}{3}}-b^{\frac{2}{3}})^{\frac{1}{2}}}{c^3(a^3-c^3)^2}\right\}-\frac{3ac}{2b^2}\left\{\frac{a^{\frac{2}{3}}c^{\frac{2}{3}}-b^{\frac{4}{3}}}{a^3c^3}\right\}$$

$$\times\left\{\frac{(b^{\frac{2}{3}}-c^{\frac{2}{3}})^{\frac{1}{2}}(a^{\frac{2}{3}}-b^{\frac{2}{3}})^{\frac{1}{2}}}{a^3-c^3}\right\}\Bigg]\int_o^b\left(b^{\frac{2}{3}}-y^{\frac{2}{3}}\right)^3dy.$$

$$\therefore\ V=\frac{4}{35}\pi b^3+\frac{8}{35}\,abc\,\sin^{-1}\left\{\frac{b^{\frac{2}{3}}-c^{\frac{2}{3}}}{a^3-c^3}\right\}^{\frac{1}{3}}-\frac{8}{35}\,b^3\sin^{-1}\left\{\frac{a(b^{\frac{2}{3}}-c^{\frac{2}{3}})}{b\,(a^3-c^3)}\right\}^{\frac{1}{3}}$$

$$-\frac{16}{35}\,abc\left\{\frac{(b^{\frac{2}{3}}-c^{\frac{2}{3}})^{\frac{5}{2}}(a^{\frac{2}{3}}-b^{\frac{2}{3}})^{\frac{1}{2}}}{a^3(c^3-a^3)^2}\right\}$$

$$-\frac{8}{35}\,abc\left\{\frac{a^{\frac{2}{3}}c^{\frac{2}{3}}-b^{\frac{4}{3}}}{a^3c^3}\right\}\left\{(b^{\frac{2}{3}}-\frac{c^{\frac{2}{3}})^{\frac{1}{2}}(a^{\frac{2}{3}}-b^{\frac{2}{3}})^{\frac{1}{2}}}{a^3-c^3}\right\}.$$

Cor. If $b=c$, $V=\frac{4}{35}\pi b^3$.

If $a=b$, $V=\frac{4}{35}\pi a^2c$.

Also solved by *M. C. STEVENS.*

PROBLEMS.

18. Proposed by J. M. BANDY, Professor of Mathematics, Elon College, North Carolina.

If the ordinate ST of any point T on a circle

$$x^2+y^2=r^2$$

be produced so that $ST.TP=r^2$, prove that the whole area between the locus of P and its asymptotes is double the area of the circle.

19. Proposed by A. L. FOOTE, No. 830, Broad Street, New York City.

A and B are in a circular room 30 feet in diameter, A being at the center and B at the circumference. B runs around at the rate of 600 feet per minute and A pursues him at the rate of 100 feet per minute. How long will the race last, and how far will each have traveled till B is caught.

Solutions to these problems should be received on or before July 1st.